REMARKS

Claims 1-6 remain in this application and stand rejected under 35 U.S.C. §103 as unpatentable over Tanaka in view of Katsumata, and further in view of Nakamigawa. Applicants respectfully traverse this rejection.

Tanaka discloses the optimization of the distance between a head and an underlayer, and is essentially irrelevant to the present claims, which are directed to optimizing the thickness of the underlayer.

Although Katsumata discloses a head structure where a reproducing element and a recording element are integrally assembled, it does not disclose the feature of the present invention whereby "the thickness of the underlayer is optimized in consideration of the size of the recording element."

Nakamigawa discloses the optimization of the magnetic characteristics of a recording layer and of the mechanical characteristics, such as disk travel properties, in floppy disks. Although the thickness of the underlayer is described, its relationship to the head structure is not disclosed. Thus, Nakamigawa is also of no relevance to the present claims.

Furthermore, Applicants note that Nakamigawa relates to floppy disk technology, where mechanical characteristics, such as disk travel properties, are important in order to perform recording/reproducing in a contacting manner. A soft magnetic underlayer is utilized as an underlayer that controls the characteristics of the recording layer so as to optimize the mechanical characteristics. Nakamigawa does not disclose that the film thickness (Tbl) of the magnetic underlayer and the saturation magnetic flux density (Bs2) are determined in accordance with the relationship with a magnetic head. Even the necessity thereof is not suggested.

The Examiner states that Nakamigawa discloses a perpendicular magnetic recording medium that has the following values: Tbl=0.5 μm (page 2, section 0007), Bs2=0.5T (5000G) (page 3, section 0012). However, the description "0.5 μm or less" in section 0007 refers to the film thickness of a magnetic layer as a recording magnetic film, and it does not mean the film thickness of the soft magnetic underlayer. Thus, saying that Tbl=0.5 μm is an incorrect statement due to this misinterpretation.

It is meaningless to combine Tanaka with Nakamigawa, since Tanaka does not disclose the thickness of the underlayer and Nakamigawa does not disclose the head structure. It is also meaningless in view of the fact that the two are directed utterly different structures, namely hard disk drives and floppy disks, which operate differently. As a result the teaching of the two patents related to basically different objects. Therefore, it is naturally meaningless to further combine these two references with Katsumata.

In summary, there is no suggestion of combining these references in view of their different objects. Furthermore, even if combined, one would not have all of the claimed elements. Thus, for the foregoing reasons, all claims in this application are in condition for allowance, prompt notice of which is respectfully solicited.

The Examiner is invited to call the undersigned at (202) 220-4200 to discuss any information concerning this application.

Applicants respectfully request a one month Extension of Time to respond to the Office Action of September 2, 2004. The extended period expires January 3, 2005

The Office is hereby authorized to charge the fee of $450.00 for a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) and any additional fees under 37 C.F.R. § 1.16 or § 1.17 or credit any overpayment to Deposit Account No. 11-0600.

Respectfully submitted,

Date: January 3, 2005

John C. Altmiller
Registration No. 25,951

KENYON & KENYON
1500 K Street, N.W., Suite 700
Washington, D.C. 20005
Tel.: (202) 220-4200
Fax.: (202) 220-4201
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